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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ian Hynd

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EXAMINER

ROBINSON, RYAN C

ART UNIT

PAPER NUMBER

2615

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,407	Applicant(s) HYND ET AL.	
	Examiner RYAN C. ROBINSON	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,9 and 22-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,5,6,8,10-21 and 31-39 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/21/2006; 8/28/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 31-39 have been added on 8/28/2007.
2. Claims 1-2, 5-8, and 10-21 have been amended on 8/28/2007.
3. Claims 3-4, 9, and 22-30 have been cancelled.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-2, 5-6, 8, 10-21, and 31-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al., PCT Publication No WO 03/005764, published on 1/16/2003, (hereby Browne).**

6. As to claim 31, Browne teaches a driver apparatus for driving a distributed mode loudspeaker (Fig. 1), the driver apparatus comprising: an actuator operable to move in dependence on an acoustic signal (6); and a coupler (9) formed of a resilient material (Page 2, line 12), the coupler being configured to, in use, couple movement of the actuator to an acoustic radiator to cause the acoustic radiator to operate in a distributed

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mode fashion. It is noted that Browne does not explicitly teach a specific hardness of the coupler, however Browne does teach that the hardness of the material must be considered to achieve the desired acoustical coupling (Page 2, lines 27-29; Page 3, lines 1-2). Therefore it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to select an appropriate hardness to realize the desired acoustical coupling including a coupler having a Shore A hardness of no more than 20.

7. As to claim 32, Browne teaches that the coupler (9), engages with the actuator (6).

8. As to claim 33, Browne teaches that the coupler (9) is configured to engage with the acoustic radiator (Page 2, lines 10-11).

9. As to claim 34, Browne teaches that the coupler defines a substantially planar surface (11) configured to engage with a surface of the acoustic radiator.

10. As to claim 35, Browne teaches that the actuator is operative in dependence upon an electrical signal (Page 3, lines 5-6).

11. As to claim 36, Browne teaches that the actuator comprises a moving coil actuator (Page 3, lines 5-7).

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12. As to claim 37, Browne teaches that the device consists of a polymer (Page 2, lines 27-28).

13. As to claim 38, Browne does not explicitly disclose a specific composition of the resilient material. However, Browne teaches that the material is suitably formed from a polymer, and flexible. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a commercially available flexible polymer as the resilient material, including a gel.

14. As to claim 39, Brown teaches that the coupler defines a substantially planar surface (11) that is configured to removably engage with a surface of the acoustic radiator (Page 2, line 11).

15. As to claim 1, Brown teaches a substantially rigid planar member (7), and that the coupler defines a first surface (11) configured to be removably coupled to the acoustic radiator (Page 2, line 11), and the substantially rigid planar member (7) being attached to the voice coil and being disposed between the voice coil and the first surface. It is noted, however that Brown does not disclose that the actuator comprises a voice coil, and a magnet assembly. Brown discloses, as an example in a particular embodiment, a magnetostrictive actuator. However, one of ordinary skill in the art would have known that any actuator would have been sufficient including one comprising a voice coil and a magnet assembly as a design choice.

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16. As to claim 2, Brown may not specifically teach that the gel comprises a hydrogel. However, Browne teaches that the material is suitably formed from a polymer, and flexible. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a commercially available flexible polymer as the gel, including a hydrogel.

17. As to claims 5 and 6, Browne may not explicitly teach a specific hardness of the coupler, however Browne does teach that the hardness of the material must be considered to achieve the desired acoustical coupling (Page 2, lines 27-29; Page 3, lines 1-2). Therefore it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to select an appropriate hardness to realize the desired acoustical coupling including a coupler having a Shore A hardness between substantially 5 and substantially 15, or substantially 10.

18. As to claim 8, Browne teaches that the coupler (9) consists of a single moulded element.

19. As to claims 10-12, Browne does not explicitly disclose the construction of a magnet assembly, however examiner takes official notice that it is well known in the art to construct a magnetic assembly having an axially extending central portion defining a first pole of a permanent magnet; and a radially extending portion coupling the central portion to an axially extending magnetic shroud, the shroud defining a second pole of

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the permanent magnet; and the central portion and the shroud define an annular flux space therebetween with a voice coil extending into the flux space.

20. As to claim 13, Browne teaches that the coupler (9) comprises a disc defining the first surface (11).

21. As to claim 14, Browne teaches that the coupler (9) comprises a wall (12) upstanding from an opposing surface of the disc (11).

22. As to claim 15, with respect to claim 1, Browne teaches that the coupler (9) accommodates the magnet assembly and the voice coil, since the actuator assembly (6) would contain the magnet assembly and voice coil.

23. As to claim 16, Browne teaches that the planar member (7) is mounted adjacent to the opposing surface of the disc (11).

24. As to claim 17, Browne teaches that the wall (12) has an inner diameter and an outer diameter, and the disc (11) has a diameter greater than said outer diameter such that the disc defines a flange around the wall.

25. As to claim 18-19 Browne teaches that the opposing surface of the disc (11) is provided with at least one continuous ridge extending around the wall (12), and the

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ridge is concentric with the wall (12). The ridge is on the outer perimeter of the disc portion (11).

26. As to claim 20, Browne teaches that the wall (12) is provided with a radially extending flange (13) for engaging the magnet assembly.

27. As to claim 21, Browne teaches that an outer diameter of the wall (12) decreases in a direction away from the disc.

Allowable Subject Matter

28. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 7, the prior art (Browne), does not teach that the coupler maintains the voice coil and magnetic assembly in a spatially separated relationship.

Conclusion

The prior art made of record

- a. PCT Publication Number **WO 03/005764**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan C. Robinson whose telephone number is (571) 270-3956. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni, can be reached on (571) 272-7505. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan Robinson

/Suhan Ni/
Primary Examiner, Art Unit 2614